Paper No. 49

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte ROBERT KLING and BERTH-OVE WALL

Appeal No. 2000-0855
Application No. 08/597,377

Heard: February 21, 2001

Before COHEN, McQUADE and GONZALES, Administrative Patent Judges.

GONZALES, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal from the examiner's final rejection of claims 1 and 3 through 25, which are all of the claims remaining in the application.[1]

We AFFIRM-IN-PART.

[1] Claim 11 was amended subsequent to the final rejection. See Paper No. 34.

The subject matter on appeal is directed to a method of securing an elastic band between two layers of at least partially

meltable material (claims 1 and 3), an elastic structure (claims 4 through 10, 20 through 22 and 24) and a diaper including at least one elastic band (claims 11 through 19, 23 and 25). A copy of the appealed claims is reproduced in the appendix to the appellants' main brief (Paper No. 42).

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Bianco	4,226,238	Oct. 07, 1980
Pieniak et al. (Pieniak)	4,337,771	Jul. 06, 1982
Buell	4,397,645	Aug. 09, 1983
Sigl et al. (Sigl)	4,437,860	Mar. 20, 1984
Hasse	4,657,539	Apr. 14, 1987
Lawson	4,695,278	Sep. 22, 1987
Proxmire et al. (Proxmire)	4,770,656	Sep. 13, 1988
Richardson	4,816,026	Mar. 28, 1989

The appealed claims stand finally rejected on the following grounds:

(1) claims 1, 4 through 6, 11 through 17, 19 and 25 stand

rejected under 35 U.S.C. § 102(b) as being anticipated by Proxmire;

(2) claim 3 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Proxmire;

(3) claims 7 and 18 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Proxmire in view of Pieniak, Sigl, Bianco, Buell and Richardson; and

(4) claims 8 through 10 and 20 through 24 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Proxmire in view of Hasse and Lawson.

The full text of the examiner's rejections and response to the argument presented by the appellants appears in the answer (Paper No. 43), while the complete statement of the appellants' argument can be found in the main and reply briefs (Paper Nos. 42 and 44, respectively).

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellants' specification and claims, to the applied prior art references, and to the

respective positions articulated by the appellants and the examiner. As a consequence of our review, we have made the determinations which follow.

Rejection (1)

Initially we note that anticipation by a prior art reference does not require either the inventive concept of the claimed

subject matter or the recognition of inherent properties that may be possessed by the prior art reference. See Verdegaal Bros. Inc. v. Union Oil Co., 814 F.2d 628, 633, 2 USPQ2d 1051, 1054 (Fed. Cir.), cert. denied, 484 U.S. 827 (1987). A prior art reference anticipates the subject of a claim when the reference discloses every feature of the claimed invention, either explicitly or inherently (see Hazani v. Int'l Trade Comm'n, 126 F.3d 1473, 1477, 44 USPQ2d 1358, 1361 (Fed. Cir. 1997) and RCA Corp. v. Applied Digital Data Systems, Inc., 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir. 1984)); however, the law of anticipation does not require that the reference teach what the appellants are claiming, but only that the claims on appeal "read on" something disclosed in the

reference (see Kalman v. Kimberly-Clark Corp., 713 F.2d 760, 772, 218 USPQ 781, 789 (Fed. Cir. 1983), cert. denied, 465 U.S. 1026 (1984)).

Claim 1

Independent claim 1 is directed to a method of securing an elastic band between two layers of at least partially meltable material comprising the steps of: placing a stretched elastic band between two layers of at least partially meltable material;

and forming perforations in the stretched elastic band directly followed by bonding together through said perforations portions of said layers located opposite said perforations by heat fusion so that the layers are bonded to one another through the perforations while the elastic band is movable relative to the layers.

Proxmire teaches a disposable diaper comprising an absorbent core 38 enclosed between a liquid-permeable bodyside liner 34 and a liquid-impermeable barrier 36. The diaper is described as having front 13 and rear 14 waist sections which

together define a waist opening, a crotch section 16 situated between a pair of marginal leg openings 18 (see col. 4, l. 25 through col. 5, l. 1) and elastomeric nonwoven laminar fabric strips 102 and 104 provided along the margins of the leg and waist openings (see col. 9, ll. 35-39). With reference to Figures 16-18, Proxmire also teaches a method for making the laminar fabric comprising the steps of sandwiching a elastomeric film or nonwoven carrier sheet 110 between at least a pair of nonwoven facing sheets 112, 114 and bonding the facing sheets 112, 114 together by ultras-onically or thermally-generated bonds through the carrier sheet

110 at spaced apart sites 116, thereby forming apertures 120 through the carrier sheet which laminate the carrier and facing sheets 112, 114 together at the spaced apart sites 116. The carrier sheet 110 and facing sheets 112, 114 can be bonded together while the carrier sheet is stretched as shown by FIG. 17 or the carrier sheet can be sandwiched between a pair of creped or microcreped nonwoven facing sheets while the carrier sheet is in an unstretched or a partially stretched condition,

as shown by FIG. 16, so that the facing sheets are expansible when the web is stretched. See col. 9, l. 55 through col. 10, l. 14.

With respect to claim 1, the appellants assert (main brief, p. 16) that Proxmire does not disclose the step of forming perforations in the stretched elastic band directly followed by bonding together through said perforations portions of the layers of at least partially meltable material located opposite said perforations by heat fusion so that the layers are bonded to one another through the perforations. We agree.

Claim 1 requires that portions of the meltable material layers located opposite the perforations be bonded to one another. While Proxmire teaches forming perforations in the stretched elastic band or carrier sheet 110 and thermally bonding together portions of the layers 112 and 114 through the perforations, the reference does not explicitly or inherently disclose that the step of forming the perforations

is followed by bonding together through said perforations portions of the layers 112, 114 “located opposite said perforations” as required by appealed claim 1. Rather, Proxmire appears to form perforations 116 through the layers 110, 112 and 114 while simultaneously thermally bonding or fusing the layers 110, 112 and 114 together.

Accordingly, we will not sustain the standing 35 U.S.C. § 102(b) rejection of claim 1.

Claims 4, 6, 11, 15, 16, 19 and 25

Turning now to independent claims 4 and 11, we observe that claim 4 is drawn to an elastic structure comprising an elastic band and a material layer positioned on each side of the elastic band, the material layers being at least partially comprised of meltable material, the elastic band having perforation through all of which the material layers are joined together as a result of forming the perforations in the elastic band while stretched directly followed by joining the material layers through the

perforation by heat fusion, the elastic band being movable relative to the material layers. Claim 11 is drawn to a diaper incorporating an elastic band which is secured in a stretched state between two material layers which are at least partially comprised of meltable material, the elastic band having perforations through all of which the material layers located on opposite sides of the elastic band are bonded to one another as a result of forming the perforations while the elastic band is stretched directly followed by bonding the material layers through the perforation in the stretched elastic band by heat fusion, the material layers being bonded in a pattern so that the elastic band is held mechanically between the material layers and is movable relative to the material layers.

The appellants argue that there is no disclosure in Proxmire of an elastic band provided with a plurality of perforations through which the material layers on opposite sides of the elastic band are joined together with the elastic band being held mechanically between the material layers so that the elastic band is movable relative to the material layers as recited in claims 4 and 11. See main brief, p. 23.

We disagree.

Proxmire teaches an elastomeric nonwoven laminar fabric strips or elastic structure comprising an elastomeric carrier sheet 110, i.e., an elastic band, provided with a plurality of apertures 120 (Fig. 18) through which the facing sheets 112, 114 (corresponding to the claimed material layers) on opposite sides of the carrier sheet 110 are joined together with the elastic band being held mechanically between the facing sheets. It is also apparent to the members of this panel that after the carrier sheet 110 has been laminated or bonded to the facing sheets 112, 114 at the apertures 120, the sheet 110 is, at least to some degree, movable relative to the facing sheets 112, 114, e.g., a portion of the facing sheet 112 located between apertures shown in the unstretched state in Fig. 16 may be moved side-to-side or away from the carrier sheet 110. Neither claim 4 nor claim 11 requires that the elastic band be movable relative to the material layers at the locations where the material layers are joined to one another as the appellants seem to suggest. Further, neither claim 4

nor claim 11 requires that portions of the meltable material layers located opposite the perforations be bonded to one another as called for in claim 1. Instead, claim 11 simply requires that the material layers located on opposite sides of the elastic band be bonded to one another. Accordingly, we will sustain the examiner's rejection of claims 4 and 11 under 35 U.S.C. § 102 as anticipated by Proxmire.

Claims 15 and 19 are dependent on claim 11 and have not been separately argued from that claim. See main brief, p. 12. Therefore, we will also sustain the rejection of claims 15 and 19 under 35 U.S.C. § 102 as anticipated by Proxmire.

Claim 6 calls for the elastic band to include at least one region of substantially punctiform[2] perforations through which the two material layers are bonded together. The appellants argue (main brief, p. 26) that Proxmire does not disclose perforations through which the two material layers

[2] Webster's Third New International Dictionary (G. & C. Merriam Company, 1971) defines "punctiform" as "having the form or character of a point."

are bonded together. We disagree.

Proxmire specifically teaches

> . . . sandwiching a liquid impermeable and nonself-adhering elastomeric film or nonwoven carrier sheet 110 between at least a pair of nonwoven facing sheets 112, 114 and bonding the facing sheets 114 [sic, 112 and 114] together by autogenous bonds, shown by the arrows 118, such as ultrasonically or thermally-generated bonds, **through the carrier sheet** 112 [sic, 110] at spaced apart sites 116, thereby
>
> forming breathable apertures 120 through the carrier sheet which laminate the carrier and facing sheets together at the spaced apart sites 116. (Emphasis added)

Col. 9, l. 65 through col. 10, l. 6. Thus, Proxmire does disclose punctiform perforations 120 through which the two material layers 112 and 114 are bonded together. Accordingly, we will also sustain the rejection of claim 6 under 35 U.S.C. § 102 as anticipated by Proxmire.

Claim 16 recites

> [a] diaper according to claim 11, wherein the at least one elastic band is attached at least along the waist margin of the rear part of the diaper, the diaper having fastener tabs for securing the diaper, said fastener tabs being affixed to sides of the rear part of the diaper adjacent the waist margin, the at least one elastic band having a pattern of perforations which extend substantially transversely

> across the at least one elastic band within regions of the waist margin at which the fastener tabs are affixed.

The appellants argue (main brief, p. 28) that there is no disclosure in Proxmire of utilizing a pattern of perforations that extend transversely across the elastic band for the purpose of controlling the elastic characteristics of the elastic device. We again disagree.

Proxmire discloses a pattern of perforations 120 that extend transversely across the elastic band in Figure 18. Further, Proxmire specifically teaches that the number and spacing of the bonding sites 116 affects the stretch properties or elastic characteristics of the laminate. See col. 10, ll. 22-26. Thus, we will also sustain the rejection of claim 16 under 35 U.S.C.
§ 102 as anticipated by Proxmire.

Claim 25 depends from claim 11 and calls for at least one elastic band affixed along at least one of the leg and waist margins of a diaper and further including elastic devices

which are attached to the diaper by welding. We find support for claim 25 on page 12 of the appellants' specification which teaches that

elastic devices 111, 112 are secured within the fold 116 by ultrasonic welding.

Proxmire discloses an elastic band 104 affixed along the waist margin of a diaper and further including elastic devices 102 which are attached along the leg margins of a diaper (see Fig. 2). Proxmire also teaches that the elastic devices 102 can be attached to the diaper by autogenous bonding. See col. 12, ll. 35-40. According to Proxmire, ultrasonic or thermal bonding

are examples of autogenous bonding. See col. 9, l. 68 - col. 10. l. 2 and col. 15, ll. 22-23. The term "weld," as it is ordinarily understood and as used in the appellants' specification, is certainly broad enough to encompass an ultrasonic or thermal bond.[3] Thus, the appellants' argument

[3] Webster's II New Riverside University Dictionary (Riverside Publishing Co., 1982) defines "weld" as "1. To join (metals) by applying heat, sometimes

(main brief, p. 29) that claim 25 is not anticipated by Proxmire is not well taken and we will sustain the rejection of this claim under 35 U.S.C. § 102 as anticipated by Proxmire as well.

Claims 5, 12 through 14 and 17

Claim 5 calls for the elastic band to include at least two regions having different bonding patterns and different elasticity. The language "the elastic band includes . . . different bonding patterns" refers to the locations at which the material layers are joined to one another, not to a bonding pattern used to bond the elastic band to the body of the diaper. Claim 17 calls for an additional elastic band affixed to each leg margin with each band having at least two regions having different bonding patterns and different elasticity. The

examiner does not identify where in the Proxmire patent it is disclosed that the laminar fabric includes at least two regions having different bonding patterns and different

with pressure and sometimes with an intermediate or filler metal having a high melting point."

elasticity and we can find no such disclosure. Absent any teaching in the Proxmire patent of an elastic band having at least two regions with different bonding patterns and different elasticity, we cannot support the examiner's rejection of claims 5 and 17.

The rejection of claims 5 and 17, therefore, will not be sustained.

Claim 12 requires that at least one of the material layers comprises one of the casing layers. See, for example, the appellants' Figures 4 through 6. In support of the rejection, the examiner cites Proxmire's teaching at column 9, lines 51-54, that the laminar fabric comprising the leg 102 and waist 104 elastic members and the outer cover 12 of the diaper may be formed of the same elastomeric fabric. However, as the appellants correctly point out (main brief, p. 27), this teaching of Proxmire appears to suggest that the material used to form the leg and waist elastic members may be a material similar to that used to form the outer cover 12. We also note that Proxmire

specifically teaches that the waist elastic member 104 is retained within the finished hem 78 of outer cover 12 or that either of the leg 102 and waist 104 elastics can be attached at their innermost edges to the outermost edges of the leg openings 18 or preferably, the leg elastics 102 can be positioned in overlying relationship with the leg openings 108 so that the outermost edges of the strips coincide with the outermost edges of the leg openings 18 as shown in FIGS. 2, 3 and 3A. Since the examiner does not identify where in the Proxmire patent it is disclosed that at least one of the material layers comprises one of the casing layers, we cannot support the examiner's rejection of claim 12 or of claims 13 and 14 dependent thereon.

The rejection of claims 12 through 14, therefore, will not be sustained.

Rejection (2)

We will also not sustain the rejection of claim 3 as unpatentable under 35 U.S.C. § 103(a) over Proxmire.

Claim 3 depends from claim 1. Not only does Proxmire fail to teach or suggest the step of forming perforations in the stretched elastic band directly followed by bonding

together

through said perforations portions of the layers of at least partially meltable material located opposite said perforations by heat fusion so that the layers are bonded to one another through the perforations as recited in claim 1, but the examiner acknowledges that Proxmire does not teach the step of passing a uniformly stretched elastic band over a bonding roller having a pattern of raised portions as called for in claim 3. Nevertheless, the examiner concludes that the step recited in claim 3 is a matter of engineering design choice.

However, the case the examiner relies upon (answer, p. 6), In re Kuhle, 526 F.2d 553, 188 USPQ 7 (CCPA 1975), does not support the examiner's position. In Kuhle, "the applicant failed to set forth any reasons why the differences between the claimed invention and the prior art would result in a different function or give unexpected results." In re Chu, 66 F.3d, 292, 298-9, 36 USPQ2d 1089, 1094 (Fed. Cir. 1995). Here, the appellants explain (main brief, p. 31) that "the formation of the perforations in the elastic band is

facilitated as is accurate placement of the perforations at the proper locations for achieving the desired elastic characteristics of the resulting elastic structure."

Thus, "design choice" is not applicable, and in the absence of any further evidence of obviousness for the modification, we cannot sustain the rejection of claim 3 over Proxmire.

Rejection (3)

Likewise, we will not sustain the rejection of claims 7 and 18 as unpatentable under 35 U.S.C. § 103(a) over Proxmire in view of Pieniak, Sigl, Bianco, Buell and Richardson.

Claim 7 depends on claim 4 and additionally requires the elastic band to include at least one region with perforations which have a smaller extension in a direction in which the elastic band acts than perpendicularly to said direction. See the appellants' specification, p. 10, ll. 20-29. The examiner cites Pieniak, Sigl, Bianco, Buell and Richardson for teachings of "various bond configurations or shapes or patterns and regions which cause different elasticity" (answer, p. 6). However, we agree with the appellants that

none of the applied references teach or suggest an elastic band including at least one region with perforations which have a smaller extension in a direction in which the elastic band acts than perpendicularly to said direction. Thus, even if it were obvious to modify Proxmire in

view of Pieniak, Sigl, Bianco, Buell and Richardson as set forth in the rejection, an artisan would not have arrived at the claimed subject matter.

Claim 18 depends from claim 17 and requires each of the additional elastic bands affixed to the leg margins to include at least three regions of different bonding patterns and different degrees of elasticity with one of the patterns being located in the crotch part of the diaper and having the greatest elasticity. As pointed out above, the language "bonding patterns" refers to the locations at which the material layers are joined to one another, not to a bonding pattern used to bond the elastic band to the body of the diaper. Once again, we agree with the appellants' argument (main brief, p. 37) that none of the applied art teaches or

suggests elastic bands affixed to the leg margins to include at least three regions of different bonding patterns and different degrees of elasticity with one of the patterns being located in the crotch part of the diaper and having the greatest elasticity. Since all the claim limitations would not have been taught or suggested by the combined disclosures of Proxmire, Pieniak, Sigl, Bianco, Buell and Richardson, it follows

that the examiner has not established the prima facie obviousness of the invention set forth in claim 18. See In re Royka, 490 F.2d, 981, 985, 180 USPQ 580, 583 (CCPA 1974). Accordingly, we cannot support the examiner's rejection of claim 18 under 35 U.S.C. § 103.

Rejection (4)

We will, however, sustain the rejection of claims 8 through 10 and 20 through 24 as unpatentable under 35 U.S.C. § 103(a) over Proxmire in view of Hasse and Lawson.

Claim 8 is dependent on claim 4 and recites that the elastic band is made of elastic foam material having closed

cells. Claim 9 depends on claim 8 and recites that the foam material is polyester-based polyurethane foam. Claim 10 is dependent on claim 4 and recites that the elastic band is made of a plurality of separate bands of natural rubber.

Claim 20 is dependent on claim 4 and recites that the elastic band is made of a plurality of separate bands of elastic foam material having open cells. Claim 21 is dependent on claim 4 and recites that the elastic band is made of a plurality of separate bands of elastic foam material having closed cells. Claim 22 is dependent on claim 4 and recites that the elastic

band is made of at least one band of elastic foam material. Claim 23 is dependent on claim 11 and recites that the elastic band is made of at least one band of elastic foam material. Claim 24 is dependent on claim 4 and recites that the elastic band is made of a band of natural rubber.

Hasse teaches a diaper including elastic strands 25 made of natural rubber secured to leg flaps 28 and a leg cuff member 26 made of resilient material, such as, polypropylene,

polyester, rayon, nylon, and polyurethane foam. See col. 5, ll. 5-58.

Lawson teaches a diaper including a flap elastic member 60 made of natural rubber, elastomeric films, polyurethane films, elastomeric foams, and formed elastic scrim. In addition, Lawson teaches that the flap elastic members 60 may comprise a single strand of elastic material or may comprise several parallel or nonparallel strands of elastic material. See col. 8, ll. 29-52.

The examiner cites Hasse and Lawson as evidence that prior to the appellants' invention elastomeric foams and rubbers were known in the art to be equivalent and interchangeable with elastomeric films and that single elastic bands were known in the art to be equivalent and interchangeable with plural elastic

bands. In addition, the examiner determined that it would have been obvious prior to the appellants' invention to substitute the materials taught by Hasse and Lawson for the elastomeric film used by Proxmire in making the carrier sheet

110.

The appellants emphasize that Hasse and Lawson both disclose elastic bands that are secured in place by an adhesive and that neither reference discloses an elastic device comprised of material layers positioned on opposite sides of the elastic band and bonded to one another through perforations provided in the elastic band. Consequently, the appellants argue that the disclosures of Proxmire, Hasse and Lawson would not have led a person of ordinary skill in the art to construct an elastic structure or a diaper including such elastic structure, wherein the elastic structure has the features set forth in claims 8 through 10 and 20 through 24. See main brief, pp. 38-41.

The appellants' argument is not persuasive. Artisans must be presumed to know something about the art apart from what the references disclose (see In re Jacoby, 309 F.2d 513, 516, 135 USPQ 317, 319 (CCPA 1962)) and the conclusion of obviousness may be made from "common knowledge and common sense" of the person of

ordinary skill in the art (see In re Bozek, 416 F.2d 1385, 1390, 163 USPQ 545, 549 (CCPA 1969)). Moreover, skill is presumed on the part of those practicing in the art. See In re Sovish, 769 F.2d 738, 743, 226 USPQ 771, 774 (Fed. Cir. 1985). Therefore, the respective advantages and disadvantages of well-known materials used in the disposable absorbent garment art such as natural rubber and elastomers would have been apparent to the artisan (note In re Heinrich, 268 F.2d 753, 122 USPQ 388, 390 (CCPA 1959)) and, accordingly, we perceive that the selection of well-known materials having properties which are well-known in the art (such as natural rubber and polyurethane foam) would have been obvious (see In re Leshin, 277 F.2d 197, 125 USPQ 416, 418 (CCPA 1960)).

CONCLUSION

To summarize, the examiner's decision to reject claims 1, 4 through 6, 11 through 17, 19 and 25 under 35 U.S.C. § 102 is affirmed as to claims 4, 6, 11, 15, 16, 19 and 25, but reversed as to claims 1, 5, 12 through 14 and 17. In addition, the examiner's decision to reject claims 3, 7 and 18 under 35 U.S.C. § 103 is reversed and the examiner's decision

to reject claims 8 through 10 and 20 through 24 under 35 U.S.C. § 103 is affirmed.

The decision of the examiner is affirmed-in-part.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

IRWIN CHARLES COHEN Administrative Patent Judge	)
JOHN P. McQUADE Administrative Patent Judge	) BOARD OF PATENT APPEALS AND INTERFERENCES
JOHN F. GONZALES Administrative Patent Judge	)

jfg/vsh

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